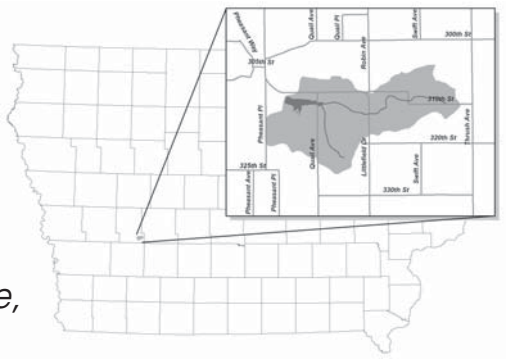
Clean Water starts with you

Littlefield Lake



Pollutant: *Algae and turbidity*

Pollution Sources: *Row crop agriculture, pasture land, internal lake recycling*

What's wrong with Littlefield Lake?

Excessive algae blooms and poor water clarity keep the Audubon County lake from meeting its state-designated standards.

These algae blooms and cloudy water make the lake less appealing, both visually and for recreational uses like swimming.

However, the algae blooms and cloudy water do not pose a specific human health threat.

What is causing the problem?

Most pollution in the Littlefield Lake watershed (the area of land that drains into the lake) comes from nonpoint sources, or sources that are not easily traced back to a specific "point," like a wastewater treatment or industrial plant.

In the Littlefield Lake watershed, nonpoint sources include areas of row crop, pasture and direct precipitation.

To reduce the amount of nutrients reaching the lake, changes in land and lake management will be needed. It will take time to make these changes and to see the effects.

The DNR tests waters throughout Iowa to make sure they are meeting state water quality standards. Those standards are in place to protect drinking water, aquatic life and recreational uses, like swimming. When a stream or lake doesn't meet those standards, the stream or lake is placed on the state's impaired waters list. The DNR then creates a plan which outlines ways Iowans can help improve the water quality in their community's lakes and streams.

DNR needs your input

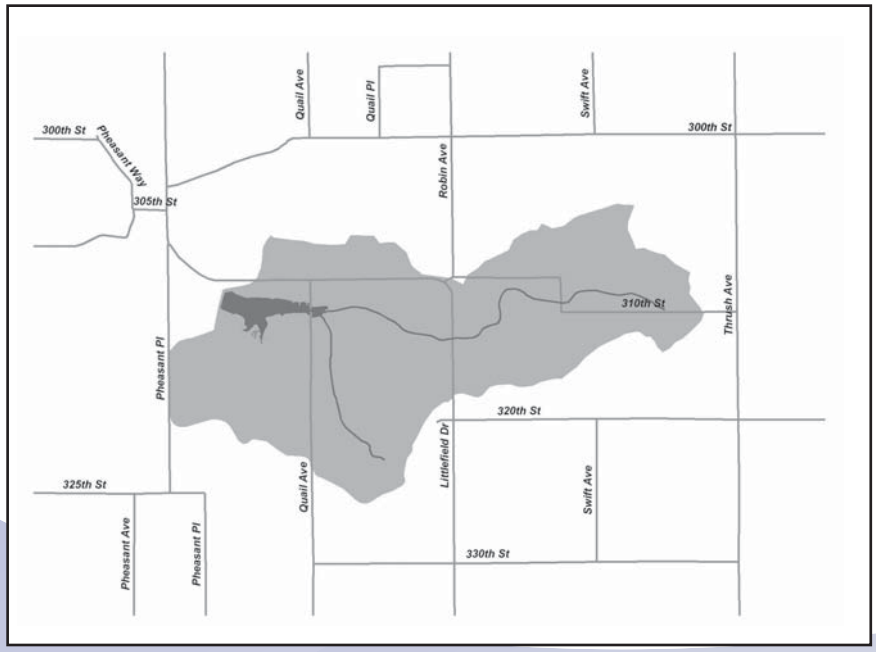
Every Iowan needs the help of their fellow citizens and watershed groups to improve water quality in their community. If you or your group would like to meet with a DNR staff member to discuss water quality, please contact Chris Van Gorp at (515) 281-4791 or Chris.VanGorp@dnr.state.ia.us

DNR

For more information on water quality improvement plans, please visit www.iowadnr.com/water/watershed/

The map to the right shows the Littlefield Lake watershed shaded in gray.

A watershed is an area of land that drains into a body of water. In this case, all land shaded in gray drains into Littlefield Lake.



What can be done to improve Littlefield Lake?

The ultimate goal is to improve water quality and remove the lake from the state's impaired waters list. To do that, the levels of algae blooms need to be reduced and water clarity needs to be improved.

Using research results and with the help of the public, the DNR has developed a water quality improvement plan (also known as a TMDL, or total maximum daily load).

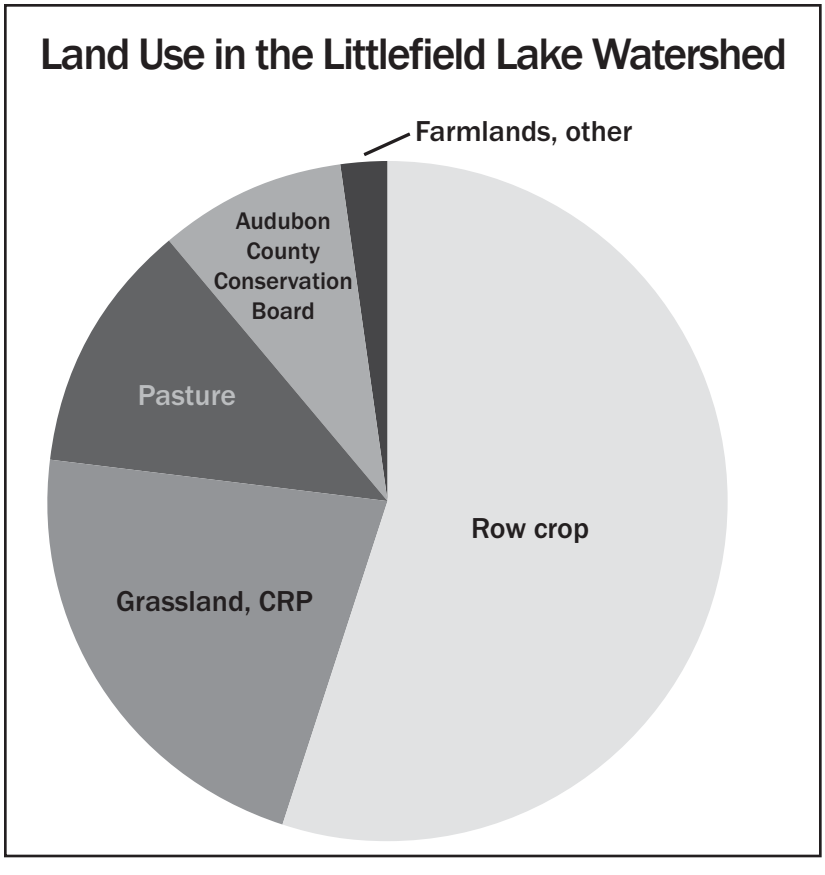
The plan will help reduce the amount of pollutants reaching Littlefield Lake. A water quality improvement plan is a suggestion to local communities on how they can improve their area's water quality.

While the DNR has done the background research and can provide some technical and funding assistance, it is ultimately up to the watershed residents and businesses to take action and clean up the lake.

Goals for Littlefield Lake

The DNR has identified goals that must be met to make a significant improvement in water quality at Littlefield Lake.

Total phosphorus must be reduced by at least 26 percent. Reducing total phosphorus will result in less algae in the lake.



The amount of sediment reaching the lake also needs to be reduced. A study by the Iowa Department of Agriculture and Land Stewardship in 1990 identified 1,690 acres in the watershed that exceeded tolerable soil loss limits.

A DNR analysis based on 2005 land use and management practices found that at least 200 acres still exceed soil loss limits.

Reducing soil loss and the amount of sediment reaching the lake will help improve water clarity. The degree of water clarity is measured by a Secchi Disk reading. In Littlefield Lake, the Secchi depth must increase from .55 meters to 0.7 meters.

Installing conservation practices in the watershed can help us to achieve these goals.

The DNR suggests the following conservation practices for the Littlefield Lake watershed:

Land management:

♦ Install terraces, ponds or other erosion and water control structures at appropriate places within the watershed to control erosion and reduce the amount of sediment and phosphorus reaching the lake.

♦ Continue encouraging the adoption of reduced tillage systems, especially no-till and strip tillage.

♦ Improve pasture management on about 230 acres of pasture in poor condition.

♦ Increase the efficiency of the road riser structure on the east end of the lake as a sediment trap. Currently, the structure only has a trap efficiency of 25 percent.